

## CLAIMS

1 1. A method of providing authentication for a network-based transaction,  
2 the method comprising:  
3 presenting a first information set to a user through an Internet ac-  
4 cess device, the first information set being associated with the transaction;  
5 creating a coupling between the first information set and a second  
6 information set, wherein the second information set is also associated with  
7 the transaction;  
8 presenting the second information set to the user and requesting  
9 authorization of the transaction at a mobile terminal using public land mo-  
10 bile network (PLMN) radio resources; and  
11 receiving authorization information for the transaction from the mo-  
12 bile terminal using the PLMN radio resources.

1 2. The method of claim 1 wherein creating the coupling further comprises  
2 sending a wireless application protocol (WAP) push message to the mobile termi-  
3 nal.

1 3. The method of claim 1 wherein the authorization information comprises  
2 client-side public key infrastructure (PKI) information.

1           4. The method of claim 2 wherein the authorization information comprises  
2 client-side public key infrastructure (PKI) information.

1           5. The method of claim 1 wherein the authorization information comprises  
2 a password.

1           6. The method of claim 5 wherein the authorization information further  
2 comprises a caller line identification (caller ID) for the mobile terminal.

1           7. A method of authorizing a transaction in which transaction information is  
2 presented to a user at an Internet access device in a first information set in a first  
3 format suitable for presentation on the Internet access device, the method com-  
4 prising:

5           creating a second information set in a second format suitable for  
6 presentation at a mobile terminal, wherein the second information set is  
7 representative of the first information set;

8           linking the first information set and the second information set;

9           sending the second information set to a public land mobile network  
10 (PLMN) for presentation to the user at the mobile terminal; and

11           receiving authentication information from the mobile terminal through  
12 the PLMN.

1           8. The method of claim 7 wherein linking the first information set and the  
2 second information set further comprises sending a wireless application protocol  
3 (WAP) push message to the mobile terminal.

1           9. The method of claim 8 wherein the WAP push message comprises a  
2 hyperlink to the second information set.

1           10. The method of claim 9 wherein the first information set is formatted in  
2 hypertext markup language (HTML) and the second information set is formatted in  
3 wireless markup language (WML).

1           11. The method of claim 10 wherein the second information set is further  
2 formatted to be signed by a user using a WAP signText script.

1           12. The method of claim 7 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1 13. The method of claim 8 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1 14. The method of claim 9 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1 15. The method of claim 10 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1 16. Apparatus for providing authentication for a network-based transaction,  
2 the apparatus comprising:

3 means for presenting a first information set to a user through an  
4 Internet access device, the first information set being associated with the  
5 transaction;

6 means for creating a coupling between the first information set and a  
7 second information set, wherein the second information set is also associ-  
8 ated with the transaction;

9 means for presenting the second information set to the user and re-  
10 questing authorization of the transaction at a mobile terminal using public  
11 land mobile network (PLMN) radio resources; and

12 means for receiving authorization information for the transaction  
13 from the mobile terminal using the PLMN radio resources.

1 17. Apparatus for authorizing a transaction in which transaction information  
2 is presented to a user at an Internet access device in a first information set in a  
3 first format suitable for presentation on the Internet access device, the apparatus  
4 comprising:

5 means for creating a second information set in a second format suit-  
6 able for presentation at a mobile terminal, wherein the second information  
7 set is representative of the first information set;

8 means for linking the first information set and the second information  
9 set;

10 means for sending the second information set to a public land mo-  
11 bile network (PLMN) for presentation to the user at the mobile terminal; and

12 means for receiving authentication information from the mobile ter-  
13 minal through the PLMN.

1 18. A computer program product comprising a computer program for  
2 authorizing a transaction in which transaction information is presented to a user at  
3 an Internet access device in a first information set in a first format suitable for  
4 presentation on the Internet access device, the computer program further com-  
5 prising:

6 instructions for creating a second information set in a second format  
7 suitable for presentation at a mobile terminal, wherein the second informa-  
8 tion set is representative of the first information set;

9 instructions for linking the first information set and the second infor-  
10 mation set;

11 instructions for sending the second information set to a public land  
12 mobile network (PLMN) for presentation to the user at the mobile terminal;  
13 and

14 instructions for receiving authentication information from the mobile  
15 terminal through the PLMN.

1 19. The computer program product of claim 18 wherein the instructions for  
2 linking the first information set and the second information set further comprise  
3 instructions for sending a wireless application protocol (WAP) push message to  
4 the mobile terminal.

1 20. The computer program product of claim 19 wherein the WAP push  
2 message comprises a hyperlink to the second information set.

1           21. The computer program product of claim 20 wherein the first information  
2 set is formatted in hypertext markup language (HTML) and the second information  
3 set is formatted in wireless markup language (WML).

1           22. The computer program product of claim 21 wherein the second infor-  
2 mation set is further formatted to be signed by a user using a WAP signText  
3 script.

1           23. The computer program product of claim 18 wherein the authentication  
2 information comprises client-side public key infrastructure (PKI) information.

1           24. The computer program product of claim 19 wherein the authentication  
2 information comprises client-side public key infrastructure (PKI) information.

1           25. The computer program product of claim 20 wherein the authentication  
2 information comprises client-side public key infrastructure (PKI) information.

1           26. The computer program product of claim 21 wherein the authentication  
2 information comprises client-side public key infrastructure (PKI) information.

1 27. A network that enables authentication of a transaction comprising:  
2 a server system operable to create a first information set formatted  
3 for an Internet access device and a second information set formatted for a  
4 mobile terminal, the second information set representative of the first infor-  
5 mation set which is in turn representative of the transaction, the server  
6 system further operable to create a coupling between the first information  
7 set and the second information set;  
8 an Internet connection at the server system; and  
9 a public land mobile network (PLMN) infrastructure operatively con-  
10 nected to the server system so as to be operable to present the second in-  
11 formation set at the mobile terminal and obtain authorization information  
12 from the mobile terminal so that the transaction can be authenticated by the  
13 server system.

1 28. The network of claim 27 wherein creating the coupling between the  
2 first information set and the second information set is accomplished at least in part  
3 by sending a wireless application protocol (WAP) push message to the mobile  
4 terminal.



1           29. The network of claim 28 wherein the WAP push message comprises a  
2           hyperlink to the second information set.

1           30. The network of claim 27 wherein the authentication information com-  
2           prises client-side public key infrastructure (PKI) information.

1           31. The network of claim 28 wherein the authentication information com-  
2           prises client-side public key infrastructure (PKI) information.

1           32. The network of claim 29 wherein the authentication information com-  
2           prises client-side public key infrastructure (PKI) information.

1           33. A system for authorizing a transaction in which transaction information  
2           is presented to a user at an Internet access device in a first information set in a  
3           first format suitable for presentation on the Internet access device, the system  
4           comprising:

5                   a hypertext markup language (HTML) server operable to provide  
6                   content for the first information set and to create a coupling between the  
7                   first information set and a second information set;

8 a wireless markup language (WML) server operable to create the  
9 second information set in a format suitable for presentation on a wireless  
10 terminal, wherein the second information set is representative of the first  
11 information set, the WML server operatively connected to the HTML server;  
12 and

13 a network connection for the system operable to enable the WML  
14 server to send the second information set over a public land mobile net-  
15 work (PLMN) for presentation to the user at the mobile terminal and receive  
16 authentication information from the mobile terminal.

1 34. The system of claim 33 wherein the WML server and the HTML server  
2 operate on a single computing platform.

1 35. The system of claim 33 wherein the network connection is an Internet  
2 connection.

1 36. The system of claim 33 wherein the coupling is created at least in part  
2 by sending a wireless application protocol (WAP) push message to the mobile  
3 terminal.

1           37. The system of claim 34 wherein the coupling is created at least in part  
2 by sending a wireless application protocol (WAP) push message to the mobile  
3 terminal.

1           38. The system of claim 35 wherein the coupling is created at least in part  
2 by sending a wireless application protocol (WAP) push message to the mobile  
3 terminal.

1           39. The system of claim 33 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           40. The system of claim 34 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           41. The system of claim 35 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           42. The system of claim 36 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.